CLAIMS

1. An information processing device, comprising:

a storage section;

a reception section capable of receiving data transmitted to a specific address that has been predetermined;

a registration processing section for adding and registering the data received by the reception section into the storage section;

a data processing section for processing the data stored in the storage section; and

a status change processing section for controlling the registration processing section and the data processing section and for switching between (i) an active status which allows additional registration of the data transmitted to the specific address and processing of the data and (ii) a non-active status other than the active status,

wherein the status change processing section instructs one or more other information processing devices to change into the active status when an amount of unprocessed data registered in the storage section exceeds a predetermined threshold value, and the status change processing section changes the information processing device into the non-active status and causes

the data processing section to process the unprocessed data.

2. The information processing device as set forth in claim 1, comprising a status information storage section for storing status information about one or more statuses of said other information processing devices,

wherein the status change processing section determines, out of said other information processing devices, an information processing device which is to be changed from the non-active status into the active status, based on the status information.

3. The information processing section as set forth in claim 1, comprising:

a calculation processing section for calculating, based on the unprocessed data stored in the storage section, a throughput of the unprocessed data; and

a comparison processing section for comparing the throughput with a predetermined threshold value,

wherein the status change processing section determines whether or not to change the information processing device into the non-active status, based on a result of comparison performed by the comparison processing section.

4. The information processing device as set forth in claim 1, wherein the non-active status includes a standby status in which the information processing device changes into the active status based on an instruction to change into the active status, said instruction being transmitted from said other information device, and

the status change processing section controls the registration processing section so that the registration processing section additionally register the data transmitted to the specific address when it is determined that the information processing device is in the standby status, and the status change processing section processes the data having been additionally registered when it is determined that said other information processing device in the active status is not capable of processing the data.

5. The information processing device as set forth in claim 1, wherein the non-active status includes (i) an off status which does not allow additional registration of data transmitted to the specific address and processing of the data and (ii) a busy status which allows the data processing section to process unprocessed data, and

the status change processing section changes the

status of the information processing device into the off status and controls the data processing section so that the data processing section does not operate when the status change processing section determines that processing of the unprocessed data is completed after changing into the busy status.

6. The information processing device as set forth in claim 1, wherein: when the registration processing section determines that received data has been transmitted to the specific address, the registration processing section informs, to a device from which the data has been transmitted, (i) reception of the data and (ii) a particular address of the information processing device.

7. An information processing program for operating the information processing device as set forth in claim 1, said information processing program causing a computer to function as each of the processing sections.

8. A computer-readable storage medium, storing the information processing program as set forth in claim 7.

9. An image forming apparatus, comprising:
the image processing device as set forth in claim 1;

and

an image forming section for forming an image based on data processed by the information processing device.

10. The image forming apparatus as set forth in claim 9, wherein

the non-active status includes a standby status prior to an active status, and

when the image forming apparatus is in the standby status, the status change processing section controls the image forming section so that the image forming section is in operating condition.

11. A line concentrator, comprising:

a plurality of ports;

an address storage section for storing a specific address that has been predetermined;

an output processing section for outputting data, received by a port, from another port capable of transmitting the data to a destination;

a data judgment processing section for judging whether or not the received data is addressed to the specific address; and

a device determination processing section for

determining a destination address used to transmit data, having been transmitted to the specific address, to at least one of information processing devices capable of processing the data,

wherein the output processing section determines a port which is to transmit the data to the destination address determined by the device determination processing section, and the output processing section outputs the data to the port having been determined.

12. The line concentrator as set forth in claim 11, comprising a status storage section for storing information about devices connected with the ports,

wherein the device determination processing section determines the destination address based on the information stored in the status storage section.

13. The line concentrator as set forth in claim 11, comprising a port storage section for storing a combination of (i) a port to which data addressed to the specific address has been transmitted and (ii) an address of an information processing device connected with the port,

wherein the output processing section determines a port which is to output the data, based on the

combination.

14. The line concentrator as set forth in claim 11, comprising a connection storage section for storing a combination of (i) a source address of a device from which data addressed to the specific address has been transmitted and (ii) the destination address determined by the device determination processing section,

wherein the output processing section determines a port which is to output the data, based on the combination.

15. The line concentrator as set forth in claim 12, comprising a self particular address storage section for storing a particular address of the line concentrator,

wherein the data judgment processing section judges whether or not the received data is addressed to the particular address of the line concentrator, and

the device determination processing section changes the information stored in the status storage section, based on contents of data transmitted to the particular address of the line concentrator.

16. The line concentrator as set forth in claim 14, wherein:

the device determination processing section rewrites a virtual address of data transmitted to the virtual address into a destination address based on the combination stored in the connection storage section, and

a source rewriting processing section is provided so as to rewrite the source address of the data into the virtual address when data corresponding to the source address stored in the connection storage section is received.

17. The line concentrator as set forth in claim 14, wherein the device determination processing section includes a deletion processing section for deleting the combination stored in the connection storage section, after a predetermined time has passed.

18. The line concentrator as set forth in claim 17, wherein:

when an information processing device that has processed data transmitted to the specific address reports to the deletion processing section that processing of the data has been completed, the deletion processing section deletes the combination stored in the connection storage section for transmission/reception of the data.

19. The line concentrator as set forth in claim 14, wherein the connection storage section stores the source address and the destination address as an IP address.

20. The line concentrator as set forth in claim 11, wherein:

the information processing device is an image forming apparatus including an image forming engine, and

while the output processing section transmits data to an image forming apparatus and causes the image forming apparatus to process the data, the device determination processing section determines other image forming apparatus to which data is to be subsequently transmitted and controls said other image forming apparatus so that an image forming engine of said other image forming apparatus is in operating condition.

21. The line concentrator as set forth in claim 11, wherein:

the device determination processing section compares a total amount of unprocessed data out of data transmitted to an information processing device with a predetermined threshold value, and

when the device determination processing section

judges that the total amount of the unprocessed data exceeds the threshold value, the device determination processing section changes a destination address to which the data is to be transmitted.

22. The line concentrator as set forth in claim 11, wherein:

when an information processing device reports to the device determination processing section that at least a part of data outputted to the information processing device has been processed, the device determination processing section recalculates a total amount of data outputted to the information processing device.

23. The line concentrator as set forth in claim 11, wherein:

when the device determination processing section receives, from an information processing device, an abnormality occurrence notice indicating occurrence of abnormality in the information processing device and an abnormality release notice indicating release from the abnormality, the device determination processing section changes information stored in the status storage section.

24. The line concentrator as set forth in claim 12,

wherein:

when the device determination processing section receives an IP address transmitted from an IP address assigning processing section for assigning IP addresses of the information processing devices or when the IP assigning processing section receives requests for assigning the IP addresses from the information processing devices, the device determination processing section updates contents of the status storage section.

25. The line concentrator as set forth in claim 13, comprising a port registration processing section for causing the port storage section to store the combination of (i) the port to which data addressed to the specific address has been transmitted and (ii) the address of the information processing device connected with the port,

wherein the port registration processing section causes the port storage section to store a group of a port, an MAC address, and an IP address based on an IP address transmitted from an IP address assigning processing section for assigning IP addresses of the information processing devices.

26. A network information processing system, comprising: the line concentrator as set forth in claim 11;

a host device capable of transmitting data to a virtual address; and a plurality of information processing devices capable of processing the data,

wherein the host device is connected to the information processing devices via at least the line concentrator.

27. The network information processing system as set forth in claim 26, wherein the information processing device includes an information notification processing section for notifying the line concentrator of information about the information processing device.

28. The network information processing system as set forth in claim 26, wherein:

the device determination processing section compares a total amount of unprocessed data out of data transmitted to an information processing device with a predetermined threshold value, and when it is judged that the total amount of the unprocessed data exceeds the predetermined threshold value, the device determination processing section changes an information processing device to which the data is to be transmitted, and the device determination processing section notifies the information processing device to which the data has been

transmitted that other information processing device takes over subsequent processing, and

the information processing device includes a control section for processing the data having been transmitted and for changing, after processing the data, the information processing device into a low power consumption status which realizes lower power consumption than that of a status which allows immediate start of data processing.

29. An information processing program for operating the line concentrator as set forth in claim 11, said program causing a computer to function as each of the processing sections.

30. A computer-readable storage medium, storing the information processing program as set forth in claim 29.